

CLAIMS

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1. Mobile phone (1) comprising:

- communication means (3, 5) for communicating via a telephone communication network (40), the telephone communication network (40) comprising a plurality of stationary base stations (41, 42, 43, 44);
- 10 - detection means (3) for detecting both a strength value corresponding to the strength of a signal (61) received from the present base station (44) and an identification code of the present base station (44);
- 15 - position information reception means (2, 4) for continuously or intermittently receiving an information signal (60) of a satellite-based positioning system (31, 32, 33);
- first computation means (2) for continuously or intermittently computing the current position of the mobile phone (1) based on the signal (60) received by the position information reception means (2, 4);
- 20 - first storage means (20) for storing the positions computed by the first computation means (2) as first position values;
- 25 - second computation means (6) for continuously or intermittently computing the current position of the mobile phone (1) based on the strength value and the identification code detected by the detection means (3);
- 30 and
- second storage means (20) for storing the positions computed by the second computation means (6) as second position values;
- characterised in that the mobile phone further comprises
- 35 - position message compiling means (6) for compiling a position message comprising the most current position

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values computed by the first and second computation means (2, 6);

wherein the communication means (3, 5) is adapted to send the position message via said telephone communication
5 network (40).

2. Mobile phone (1) according to claim 1,
characterised in that

the detection means (3) is further adapted for detecting
10 the strength values of signals (61; 62) received from adjacent base stations (41, 42, 43) and the identification codes of adjacent base stations (41, 42, 43; 51, 52); and the second computation means (6) is further adapted to use all strength values and all identification codes detected
15 by the detection means (3) for computing the current position of the mobile phone (1).

3. Mobile phone (1) according to claim 1 or 2,
characterised in that the mobile phone (1) further
20 comprises

- motion calculation means (6) for calculating a direction and velocity of motion of the mobile phone (1) based on at least two first position values and/or two second position values.

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4. Mobile phone (1) according to claim 3,
characterised in that

the position message compiling means (6) is further adapted to compile a motion message comprising the
30 direction and velocity of motion calculated by the motion calculation means,

wherein the communication means (3, 5) is adapted to send the motion message together with the position message via said telephone communication network (40).

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5. Mobile phone (1) according to one of the preceding claims,
characterised in that
the position message compiling means (6) is further
5 adapted to compile a position history message comprising
former position values computed by the first and second
computation means (2, 6),
wherein the communication means (3, 5) is adapted to send
the position history message together with the position
10 message via said telephone communication network (40).
6. Mobile phone (1) according to one of the preceding
claims,
characterised in that the mobile phone (1) further
15 comprises
- status detecting means (6) for detecting settings and
status of the mobile phone (1); and
- status message compiling means (6) for compiling a
status message comprising the settings and status
20 information detected by the status detecting means (6);
wherein the communication means (3, 5) is adapted to send
the status message via said telephone communication
network (40).
- 25 7. Mobile phone (1) according to one of the preceding
claims,
characterised in that the mobile phone (1) further
comprises
- status setting means (6) for setting settings and status
30 of the mobile phone (1);
wherein the status setting means (6) are adapted to set
the settings and status of the mobile phone (1) based on a
message received via the telephone communication
network (40), the message comprising an authorisation
35 code.

8. Mobile phone (1) according to one of the preceding claims,
characterised in that
the position message and/or motion message and/or status
5 message is sent to a service centre (70) based on a request of the service centre (70) received by the communication means (3, 5) of the mobile phone (1) via the telephone communication network (40).
- 10 9. Mobile phone (1) according to one of the preceding claims,
characterised in that
the position message and/or motion message and/or status
message is sent to an authorised person based on a request
15 of the authorised person received by the communication means (3, 5) via the telephone communication network (40).
10. Mobile phone (1) according to claim 8 or 9,
characterised in that
20 the request is filed as a request message which comprises an authorisation code.
11. Mobile phone (1) according to claim 10,
characterised in that
25 the request is filed as a request message which further comprises a message identification code for identifying the requested message.
12. Mobile phone (1) according to claim 10 or 11,
30 **characterised in that**
the request is filed as a special format short message service message; and
the position message and/or motion message and/or status message is filed in the short message service format.

13. Mobile phone (1) according to one of the claims 1 to 9,
characterised in that the mobile phone (1) further comprises
- 5 - an emergency button (25);
wherein the position message and/or motion message and/or status message is automatically sent to a service centre (70) and/or an emergency call number and/or an authorised person based on an operation of the emergency
10 button (25).
14. Mobile phone (1) according to one of the claims 8 to 13,
characterised in that the phone (1) further
15 comprises
- an emergency button (25); and
 - alarm mode performing means (6), wherein the alarm mode performing means (6) is adapted to:
20 terminate any telephone connection besides a telephone connection with a service centre (70) or an emergency call number or an authorised person;
send the position message and/or motion message and/or status message to the service centre and/or the emergency call number and/or the authorised person; and
25 automatically answer a phone call of the service centre (70) and/or an emergency call number and/or an authorised person;
based on an operation of the emergency button (25).
- 30 15. Mobile phone (1) according to claim 14,
characterised in that the mobile phone (1) further comprises
- a hands free set means (12, 13, 15);
wherein the alarm mode performing means (6) is further
35 adapted to automatically activate the hands free set

means (12, 13, 15) based on an operation of the emergency button (25).

16. Mobile phone (1) according to claim 14 or 15,
5 **characterised in that**

the alarm mode performing means (6) is further adapted to
- emit an alarm signal via a loud speaker (14, 15, 16) of
the mobile phone (1) based on an operation of the
emergency button (25).

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17. Mobile phone (1) according to claim 14, 15 or 16,
characterised in that

the alarm mode performing means (6) is further adapted to
- disable any keys (10) or touchscreen (11) of the mobile
15 phone (1) based on an operation of the emergency
button (25).

18. Mobile phone (1) according to one of the claims 14 to
17,

20 **characterised in that**

the alarm mode performing means (6) is further adapted to
- resend the position message and/or motion message and/or
status message to the service centre (70) and/or an
emergency call number and/or an authorised person if no
25 call is received from the service centre (70) and/or the
emergency call number and/or an authorised person in a
first predetermined time period after operation of the
emergency button (25).

30 19. Mobile phone (1) according to one of the claims 14 to
18,

characterised in that

the alarm mode performing means (6) is further adapted to
- automatically establish a phone connection to the
35 service centre (70) and/or the emergency call number
and/or an authorised person if no call from the service

centre (70) and/or the emergency call number and/or an authorised person is received in a second predetermined time period after operation of the emergency button (25).

5 20. Mobile phone (1) according to one of the claims 14 to 19,

characterised in that

the alarm mode performing means (6) is further adapted to
- automatically switch the mobile phone (1) on if it is in
10 an off-state during the operation of the emergency button (25).

21. Mobile phone (1) according to one of the preceding claims,

15 **characterised in that**

the alarm mode performing means (6) is further adapted to allow a termination of the alarm mode only on receipt of a reset message by the communication means (3, 5) via the telephone communication network (40), the reset message
20 comprising a reset authorisation code.

22. Mobile phone (1) according to one of the preceding claims,

characterised in that the mobile phone (1) further
25 comprises:

- a microphone (13);
- an earphone speaker (14) for handset telephone communication; and
- an additional speaker (15) on the backside of the mobile
30 phone (1) for hands free telephone communication;

wherein the microphone (13) is used for both handset and hands free telephone communication.

23. Mobile phone (1) according to one of the preceding
35 claims,

characterised in that the mobile phone (1) further comprises

- display means (8, 9) for showing information; and
- read out means (6, 12, 14, 15) for automatically read
5 out information shown by the display means (8, 9) based
on a text to speech algorithm via a speaker (14, 15) of
the mobile phone (1).

24. Mobile phone (1) according to one of the preceding
10 claims,

characterised in that the mobile phone (1) further
comprises

- self-test means (6, 12) being adapted to output tones of
specified frequency and level to at least one
15 speaker (14, 15) or buzzer (16) of the mobile phone (1)
and to measure the input level of a microphone (13) of
the mobile phone (1).

25. Mobile phone (1) according to one of the preceding
20 claims,

characterised in that the mobile phone (1) further
comprises

- contact means to provide electrical contact between the
mobile phone (1) and a docking station for the mobile
25 phone (1); and
- means to detect an individual identification code of
said docking station, the individual identification code
being provided by said docking station to said mobile
phone via said contact means.

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26. Mobile phone (1) according to claim 25,
characterised in that the position message compiling
means (6) is further adapted to include the individual
identification code of the respective docking station to
35 the position message.

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27. Docking station for a mobile phone (1) preferably according to one of the preceding claims comprising:

- holding means for mechanically holding the mobile phone (1) in a stable position;

5 - contact means to provide electrical contact between the docking station and the mobile phone (1); and

- power supply means to load a battery (18) of the mobile phone (1) via said contact means;

characterised in that the docking station further

10 comprises

- ID storing means to store and individual identification code of the docking station,

wherein the individual identification code of the docking station is provided to the mobile phone (1) via said

15 contact means.

28. Docking station according to claim 27,

characterised in that the docking station further comprises

20 - data bus connection means to provide electrical contact between a data output means of the docking station and the mobile phone (1).

29. Docking station according to claim 27 or 28,

25 **characterised in that** the docking station further comprises

- audio connection means to provide electrical contact between an audio input/ output means of the docking station and the mobile phone (1).

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